

U.S. Patent Application No. 10/650,125  
Amendment dated September 25, 2007  
Reply to Office Action of June 25, 2007

### REMARKS/ARGUMENTS

Reconsideration and continued examination of the above-identified application are respectfully requested. Claims 1-8, 11, 12, 14, and 16-73 are pending in the application. Claims 1, 7, 14, 16, and 66 have been amended. Claims 9, 10, 13, and 15 have been canceled. Claims 17-65 and 67-69 are presently withdrawn from consideration. New claims 70-73 have been added.

Claim 1 has been amended to clarify the original maintaining step as comprising comparing the first and second absorptometry values to respective preselected first and second target values as current step c) thereof, before a process adjustment step, now recited as step d). This amendment is based on the descriptions provided at paragraphs [0019]-[0020] on page 5 and [0049] on page 16, and elsewhere, in the present application.

Claim 7 has been editorially amended to clarify that a process variable is adjusted when an absorptometry value is outside the target range. This amendment is also based on the descriptions provided at paragraphs [0019] on page 5 and [0049] on page 16, and elsewhere, in the present application.

Claims 14 and 16 clarify that the maintaining procedure is performed periodically during a process, such as based on paragraphs [0020]-[0021] on page 5, and elsewhere in the present application.

Claim 66 is editorially amended in the preamble to clarify the process is performed on particulate material and to remove superfluous wording.

New claims 70-72 are based on the paragraph [0048] on page 16, and elsewhere, in the present application.

New claim 73 is based, for example, on original claims 5 and 6.

No new matter is introduced.

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New claims 70-73 are readable on the elected invention of record and should be included with claims 1-8, 11, 12, 14, 16 and 66 for examination at this time.

**Rejection of claims 1-16 and 66 under 35 U.S.C. §112, first paragraph, for noncompliance with written description requirement**

At page 2 of the Office Action, claims 1-16 and 66 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner states that the specification describes the instant invention as a method using absorptometry curves. The Examiner states that it is not clear what these curves are and how they are calculated. The Examiner stated that a search of the patent data base was made of the terms absorptometry and curve(s) in the same sentence, and that the only "hit" was the PGPUB of the instant application. The Examiner stated that a further search was made of absorptometry and the only references discovered were directed to determination of bond densities, and the absorptometry methods described in the specification are directed to measuring the maximum torque of solids while mixing. The Examiner states that clarification could be achieved if Applicants could supply corroborating evidence the taught and claimed "absorptometry curves" are well known in the art. The applicants respectfully traverse in view of the following reasons.

The evaluation of oil absorption properties, such as DBP absorption values, of a particulate material with an absorptometer has been practiced in the filler/pigment arts for many decades, such as shown by assignee's U.S. Pat. No. 3,952,087 to Antonsen et al. (see col. 2, line 54 to col. 3, line 3), which patent is cited on the Information Disclosure Statement filed concurrently herewith. As indicated in the Antonsen patent, these evaluations can be conducted on an absorptometer for a given sample in accordance with well-known industry testing standards, such as ASTM standard D2414. A copy of this ASTM standard is being provided with

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the concurrently filed Information Disclosure Statement. The present application describes new methods for obtaining values from first *and* second absorptometry curves and maintaining the values within prescribed ranges to improve product consistency of particulate material. For example, in paragraphs [0026]-[0028], and [0033]-[0039], which make reference to Figs. 1 and 2, an absorptometer is used to generate absorptometry curves in which the torque required to mix a mass of the particulate material changes as volume of liquid to the mass of particulate material is progressively changed by addition of liquid. The torque values measured as the ratio of the volume of liquid added to the mass of particulate material are recorded and plotted as a "curve," such as by using curve-fitting software accompanying the absorptometer instrument or separately provided. The maximum torque or other value of interest of the curves can be identified in this manner. In Example 1, paragraph [0053] at page 17, of the present application, an absorptometer available from C.W. Brabender Instruments, Inc. is identified as being used for identifying the torque maximum of the tested samples for purposes of absorptometry analyses conducted in conformance with ASTM standard D2414-01. The applicants are submitting herewith a product brochure for the C.W. Brabender Absorptometer C instrument, obtained from the company's website, which is also cited in the concurrently filed Information Disclosure Statement. A product brochure for another commercial absorptometer, viz., the HITEC absorptometer marketed by Thermo Haake Polymer Technology, is also being submitted. As shown by the descriptions in these product brochures, absorptometer instruments are commercially available to obtain an absorptometry curve for a particulate material sample. These commercial instruments operate in a manner that can meet ASTM D2414 standards. The Brabender brochure refers to "torque curve" at the page 3, lower middle column, and the HITEC brochure refers to both "torque curve" and "DBP curves" at page 2, right-hand side column, in connection with the

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absorptometry measurements and analysis performed by the instruments. One skilled in the art will appreciate that a torque or DBP curve described in these product brochures is comparable to a single "absorptometry curve" as that terminology is used in the present application. As was explained in paragraph [0055] on page 18 with reference to Fig. 3 in the present application, samples of carbon black that were the same by standard morphology tests are shown to be different from each other when tested using different liquids. Therefore, in methods of certain embodiments of the present invention, extracting and comparing of values from first *and* second absorptometry curves obtained using respective different test liquids on the absorptometer instrument is used to maintain the values within prescribed ranges to provide better product consistency in particulate material than possible with the typical morphological values alone. In view of these publications and the teachings of present application, one skilled in the art would recognize what the applicants mean by the terminology "absorptometry curve" as used in the present claims. Further, they would understand that the applicants were in possession of the claimed invention.

Reconsideration and withdrawal of this rejection is respectfully requested.

**Rejection of claims 1-16 and 66 under 35 U.S.C. §112, second paragraph, for indefiniteness**

At pages 3-4 of the Office Action, claims 1-16 and 66 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding the claims in general, the Examiner alleges that it is not clear how the "absorptometry curves" are created. This rejection is traversed.

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In responding above to the Examiner's separate lack of written description rejection, the applicants have explained how the state of art understands how to obtain an absorptometry curve for particulate material, such as carbon black, and that the present application describes unique methods for obtaining values from first and second absorptometry curves and maintaining the values within prescribed ranges to improve product consistency (e.g., see paragraphs [0026]-[0028], [0033]-[0039], [0053], and Figs. 1 and 2). Reference is made to those remarks of the applicants for purposes of responding to this separate basis of rejection. Reconsideration and withdrawal of the rejection is requested.

Regarding claim 1 in particular, the Examiner alleges it is unclear what steps are intended to accomplish "c) maintaining the value from the first absorptometry curve..." and specifically questions as to how the value is maintained. This rejection is traversed.

The present application provides a definition, explanation and illustration of the meaning and scope of the claim term "maintaining", such as at paragraphs [0019] on page 5 and [0049]-[0050] at pages 16-17, and elsewhere, of the present application. These descriptions in the present application also explain how the value can be maintained. Paragraphs [0019] and [0050] in particular provides practical guidance on which process variables can be manipulated for purposes of maintaining an absorptometry value within a target range. Claim terms must be properly read in light of the specification. Also, claim 1 has been amended to further clarify two substeps of "maintaining" as described in the present application insofar as comparing the measured absorptometry values with target values, and optionally adjusting the process if the values are outside the target range. Dependent claims 7 and 8 provide further elaboration on the maintaining step, but should not be needed for the understanding of the parent claim. Reconsideration and withdrawal of the rejection is requested.

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Regarding claim 6, the Examiner alleges that it is not clear how the various extraction values are combined. This rejection is traversed.

The present application, at paragraph [0035] on page 11, and elsewhere, provides specific descriptions and illustrations of "combinations" of the recited extracted values. Therefore, the "combinations" terminology as recited in original claim 6 is definite, when properly read in light of the specification. Reconsideration and withdrawal of the rejection is requested.

Regarding claims 9, 10, 13, 15, the Examiner alleges that these claims are indefinite. These rejections are moot in view of the cancellation of the claims.

Regarding claim 14, the Examiner alleges that it is not clear what method steps are contemplated by "...a quality control method...", as the Examiner alleges that there are many quality control methods. This rejection is traversed.

To the extent this rejection is premised on claim breadth, the applicants respond that breadth is not indefiniteness. Moreover, paragraph [0050] on pages 16-17 of the present application provides many examples of process adjustments that can be used to implement a quality control method in accordance with this claim. Reconsideration and withdrawal of the rejection is requested.

Regarding claim 16, the Examiner alleges that it is not clear what method steps are contemplated by "...a quality assurance method...". This rejection is traversed.

The present application defines what is meant by quality assurance methods at paragraph [0020] on page 5. Current step d) recited in claim 1, albeit optional, provides for a remedial step where the comparing step of step c) identifies an absorptometry value outside a specific target range. Reconsideration and withdrawal of the rejection is requested.

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Regarding claim 66, the Examiner alleges that it is not clear what method steps are taken to obtain the "...at least one value...", e.g., the Examiner questions how are the values from each curve combined to acquire the one value. This rejection is traversed.

The present application provides a specific definition for the term "maintaining" at paragraphs [0019] on page 5, and also illustrates how values from each curve can be combined at paragraph [0035] on page 11. The applicants are entitled to be their own lexicographers. Reconsideration and withdrawal of this rejection is requested.

For the reasons explained below, Applicants respectfully submit that claims 1-8, 11, 12, 14, 16 and 66 define the subject matter which they regard as their invention with a reasonable degree of precision and particularity sufficient for purposes of complying with the requirements of 35 U.S.C. §112, second paragraph. Those skilled in the art can ascertain whether a particular embodiment would, or would not be, within the scope of any of claims 1-8, 11, 12, 14, 16, and 66.

In view of at least the above, reconsideration and withdrawal of the indefiniteness rejection made against claims 1-8, 11, 12, 14, 16, and 66 is respectfully requested.

**Rejection of claims 1-16 and 66 under 35 U.S.C. §102(b) over Han et al., U.S. Pat. No. 4,241,602, Tadros, U.S. Pat. No. 5,078,007, or Tjahjadi et al., U.S. Pat. No. 5,974,866**

At page 4 of the Office Action, claims 1-16 and 66 were rejected under 35 U.S.C. §102(b) as being anticipated by Han et al., U.S. Pat. No. 4,241,602, Tadros, U.S. Pat. No. 5,078,007, or Tjahjadi et al., U.S. Pat. No. 5,974,866. The Examiner alleged that, in light of the above-noted Section 112, first and second paragraph issues, the invention is best understood as a method of quality assurance by measuring the viscosity of the product. All of the cited prior art references measure the quality of a polymer product using a rheometer. This rejection is

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respectfully traversed.

As explained in the present specification, the present invention is directed to a method for maintaining at least one value extracted from at least two absorptometry curves of a particulate material within target ranges, wherein at least one first absorptometry curve is obtained by combining the particulate material with a first liquid in an absorptometer; and wherein at least one second absorptometry curve is obtained by combining the particulate material with a second liquid in an absorptometer, where the first and second liquids are different. At least one value from the first absorptometry curve is compared to a first target value for determining if the at least one value from the first absorptometry curve is within a preselected first target range, and at least one value from the second absorptometry curve is compared to a second target value for determining if the at least one value from the second absorptometry curve is within a preselected second target range. The process for making the particulate material can be adjusted where the value from the first absorptometry curve is not within the first target range or where the value from the second absorptometry curve is not within the second target range for the particulate material in order to bring the value back within the prescribed target range. This present invention is useful in resolving a serious problem associated with particulate material production in which particulate materials that are seemingly made "within spec" with respect to morphology, such as particles size, surface area, structure, porosity, etc., nonetheless do not perform consistently as expected in customer applications. The method of the present invention helps insure that customers receive particulate materials that not only are "within spec" relative to morphological properties and the like, but which also will perform consistently and reliably in applications.

As acknowledged in the Office Action, Han et al., Tadros and Tjahjadi et al. describe



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rheometers for measuring viscosities. Han et al. shows a rheometer for measuring fluid viscosities, and Tadros et al. and Tjahjadi et al. show rheometers for measuring viscosities of polymer melts. None of these references teach or suggest a method of providing product consistency of *particulate material* with steps of obtaining at least two *absorptometry curves* with an absorptometer or absorptometers using different liquids, and *comparing* the results with target respective ranges and optionally *adjusting a process* variable if a value is outside a target range to bring it back with the range. As is apparent from the applicants' above response to the lack of written description rejection, including the product trade brochures on absorptometers submitted herewith, the obtaining of an absorptometry or torque curve for *a particulate material* with an absorptometer, such as a Brabender absorptometer, is NOT a measurement of *fluid viscosity* as taught by the relied upon references. The Examiner's characterization of the present claimed invention at page 4 of the Office Action as relating merely to quality assurance "by measuring the viscosity of the product" is inaccurate. Claim 1 recites numerous features and recitations that are not taught nor suggested by any one of Han et al., Tadros and Tjahjadi et al.

Dependent claims 2-8, 11, 12, 14 and 16 differ from Han et al., Tadros and Tjahjadi et al. for at least the same reasons as their parent claim 1.

Claim 66 recites a method of providing product consistency of particulate material comprising maintaining at least one value extracted from at least two absorptometry curves of a particulate material within target ranges, wherein at least one first absorptometry curve is obtained by combining the particulate material with a first liquid in an absorptometer; and wherein at least one second absorptometry curve is obtained by combining the particulate material with a second liquid in an absorptometer. None of the cited references of Han et al., Tadros or Tjahjadi et al. identically teach or suggest this claim.

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Reconsideration and withdrawal of the rejection is requested.

**Rejection of claims 1-16 and 66 under 35 U.S.C. §102(b) over Sljaka, U.S. Pat. No. 3,229,507**

At pages 4-5 of the Office Action, claims 1-16 and 66 were rejected under 35 U.S.C. §102(b) as being anticipated by Sljaka et al., U.S. Pat. No. 3,229,507. The Examiner again alleged that, in light of the above-noted Section 112, first and second paragraph issues, the invention is best understood as a method of quality assurance by measuring the viscosity of the product. The Examiner indicates that Sljaka et al. is the same reference as described as "Opie et al." in the 3/7/05 IDS in the International search report dated 10/15/04. The Examiner states that Sljaka et al., in columns 2-4, obtains information about carbon black by mixing the carbon black with a liquid and subsequent measurement of the mixtures torque. This rejection is respectfully traversed.

The applicants point out that Sljaka et al. (i.e., assignee's own patent in the name inventors Vincent Sljaka et al. and Webster Opie) teaches a method for determining the oil absorption capacity of carbon black. The torque is measured as a liquid (oil) is added to the test sample and the results are plotted as torque versus time (columns 3-4, Fig. 3). Sljaka et al. merely describes prior practices for determining oil absorption of carbon black, but there is no method taught to assure product consistency in the manner presently claimed. In particular, Sljaka et al. does not disclose or suggest a method of providing product consistency of *particulate material* with steps of obtaining at least *two absorptometry curves* with absorptometers using *different liquids*, and *comparing* the results with respective target ranges and optionally *adjusting a process variable* if a value is outside a target range to bring it back with the range. Thus, Sljaka et al. does not teach or suggest present claim 1. Dependent claims 2-

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8, 11, 12, 14 and 16 differ from Sljaka et al. for at least the same reasons as their parent claim 1. As to present claim 66, Sljaka et al. does not disclose or suggest a method wherein a method of providing product consistency of particulate material comprising maintaining at least one value extracted from at least two absorptometry curves of a particulate material within target ranges, wherein at least one first absorptometry curve is obtained by combining the particulate material with a first liquid in an absorptometer; and wherein at least one second absorptometry curve is obtained by combining the particulate material with a second liquid in an absorptometer.

Reconsideration and withdrawal of the rejection is requested.

#### **Information Disclosure Statements**

At page 5 of the Office Action, the Examiner acknowledges receipt of the multiple Information Disclosure Statements, and cites *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc.*, 359 F. Supp. 948, *aff'd* 479 F.2d 1338.<sup>1</sup> The Examiner indicates that these references have been considered in the same manner as references encountered during a normal search of Office search files.

In the Forms PTO-1449 attached to the present Office Action, the Examiner, in several sections of the Form PTO-1449 submitted with the Information Disclosure Statement filed by first class mail on November 30, 2004, and bearing the OIPE's date-stamp of December 2, 2004 crossed-out various groups of the listed "OTHER DOCUMENTS" and put in the handwritten notation "no copies provided or characterization provided." The applicants respectfully disagree.

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<sup>1</sup> Cf., *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1184, 33 USPQ2d 1823 (Fed. Cir. 1995); 37 C.F.R. §1.56 (a) requires, *inter alia*: 'Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section.'

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Copies of each of these "OTHER DOCUMENTS" references were provided to the U.S. Patent and Trademark Office at the time the above-identified Information Disclosure Statement was filed. A copy of the date-stamped postcard from the U.S. Patent and Trademark Office acknowledging receipt of this information is attached and, clearly, the postcard shows that the number of documents set forth in the Form PTO-1449 was provided at that time. If the U.S. Patent and Trademark Office has misplaced these documents, the Examiner is requested to contact the undersigned to request additional copies, and since the Information Disclosure Statements were timely filed and evidence is attached to show the timely filing of these Information Disclosure Statements, along with the proper documents, the Examiner will need to proceed with considering these documents for purposes of completing the record. Reconsideration is respectfully requested.

#### **Restriction Requirement**

At page 5 of the Office Action, the applicants' election with traverse of Group I in their previous reply of April 24, 2007 is acknowledged. The Examiner states that that the applicants' traversal on the grounds that the subject matter of all three groups overlaps and there would be no burden of additional search is not persuasive because the criteria for restriction is if there is more than one independent and distinct invention. The Examiner maintains the restriction requirement and has made it final.

In reply to the Examiner's above-noted remarks on the alleged criteria for restriction, Applicants refer to the following provisions of M.P.E.P. §808.02:

Where the \* inventions as claimed are shown to be independent or distinct under the criteria of MPEP § 806.05(c) - § 806.06, the examiner, in order to establish reasons for insisting upon restriction, must explain why there would be a serious burden on the examiner if restriction is not required. Thus the examiner must show by appropriate explanation one of the following: (A) **Separate**

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**classification thereof: ... (B) A separate status in the art when they are  
classifiable together: ... (C) A different field of search: ...**

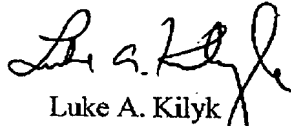
The applicants continue to disagree with this restriction requirement, and preserve their right to petition the requirement pursuant to 37 C.F.R. §1.144.

### **CONCLUSION**

In view of the foregoing remarks, the applicants respectfully request the reconsideration of this application and the timely allowance of the pending claims.

If there are any fees due in connection with the filing of this response, please charge the fees to Deposit Account No. 03-0060. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,

  
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